

Mechanisms and ways of hydrogen market economy transition: generalization and analysis in the framework of a novel IAHE conception

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A novel IAHE conception of the inevitable humankind transition into the era of Hydrogen Civilization has a program nature and consists of three interdependent and interrelated component parts: industrial-ecological, humanitarian-cultural and geopolitical-internationally legislative one [1–6].

Hydrogen Civilization conception analyzes hydrogen energy and hydrogen economy development at the present state of the art and being based on Vernadsky's studies elaborates historical, synergetic seeing on interrelated and interdependent development of the world ecological situation (changes of climate and biosphere as a hole) and hydrogen industry on a global scale.

In the presentation there is raised a question of principle: what will determine the future achievement of profitable power hydrogen production and end-use? In other words, will or won't power hydrogen be in the immediate future profitable goods of the world market economy?

In the presentation there are generalized three principle bases of the world hydrogen market economy coming.

The first principle basis

Technical improvement of hydrogen equipment and hydrogen power technologies (that has been successfully proceeding for more than 30 years already) is (and will be) permanently decreasing the cost gap between a relatively expensive for the time being hydrogen economy and the economy of oil and gas.

The second principle basis

This is the exhaustibility of the world resources of oil and gas. At the first years of the XXI century this problem has become especially "acute" and dictated already negative geopolitical tendencies and decisions.

World economy takes and will take in the future a stable uniform character of only a permanent growth of oil and gas prices. It's quite clear that such a line of development of the world market of energy carriers will facilitate the cutting down of a cost gap between hydrogen economy and oil and gas economy.

These two base regulations in principle guarantee the self-development of hydrogen economy and the motion to attain an economical benefit of power hydrogen in historical future.

The third principle basis

It is based on the understanding of dangerous state of the biosphere, on the synergetic understanding of possibility of dramatic catastrophe, the result of which would be that the form of Earth life now existing would be wiped out (details see in [6] and in the references in it).

The IAHE HyCi-Conception in its humanitarian and cultural basis reflects a real situation that the mass comprehension of the mankind and the elitist comprehension of the educated society do not perceive yet that: true quality of the life of the "golden milliard" even (and not only the whole mankind) is permanently deteriorating, they don't particularly comprehend a historically near danger of a world-wide ecological catastrophe.

The IAHE HyCi-Conception takes the slogan of the market economy: "Everything must be paid for!" and makes it wider: "Everything and the life on the Earth too, must be paid for!"

The IAHE HyCi-Conception asserts that a historical time interval needed to reach the first stage of hydrogen civilization can and will be reduced by changing the paradigm of the life quality and by introducing the system of ecological taxes.

The above given three principle bases provide a groundwork of the legislative and economical mechanism of the HyCi-Conception realization that: will ensure a transition of the world economy into the situation when power hydrogen will be an economically profitable goods, will ensure a valuable market operation of hydrogen energy and hydrogen economy as a technical-economical basis of the mankind transition into the era of hydrogen civilization.

In final stage of the presentation there are fulfilled generalization and analysis of the possible and most real ways of transition to hydrogen economy: Hydrogen Roadmap and/or Hydrogen Pathmaps? In this regard the world hydrogen community is to be fulfilling nowadays systemic analysis of the possible ways of building new energetic foundation of a country, or of group of countries, in regional and/or world scale; needed historical periods (decades) and financial resources. Important points of these efforts are readiness of the partnership between state and business, between the rich North and the pour South under the auspices of UN (UNIDO, UNESCO). Hydrogen security and sustainable development are of the most important points in the search for ways out.

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